

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action

Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name: Bulova Technologies LLC

Facility Address: 101 North Queen Street, Lancaster, PA 17604

Facility EPA ID #: PAD 000800680

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

☒ If yes – check here and continue with #2 below.

☐ If no – re-evaluate existing data, or

☐ If data are not available skip to #6 and enter “IN” (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of “Current Human Exposures Under Control” EI

A positive “Current Human Exposures Under Control” EI determination (“YE” status code) indicates that there are no “unacceptable” human exposures to “contamination” (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all “contamination” subject to RCRA corrective action at or from the identified facility [i.e., site-wide]).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The “Current Human Exposures Under Control” EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program’s overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

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2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be “contaminated”¹ above appropriately protective risk-based “levels” (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	<u>Yes</u>	<u>No</u>	<u>?</u>	<u>Rationale/Key Contaminants</u>
Groundwater		X		<u>No record of contamination</u>
Air (indoors) ²		X		<u>No record of contamination.</u>
Surface Soil (e.g., <2 ft)		X		<u>Low levels TCE detected; no remediation necessary</u>
Surface Water		X		<u>No record of contamination.</u>
Sediment		X		<u>No record of contamination.</u>
Subsurf. Soil (e.g., >2 ft)		X		<u>No record of contamination.</u>
Air (outdoors)		X		<u>TCE levels less than nonresidential screening criteria.</u>

X If no (for all media) - skip to #6, and enter “YE,” status code after providing or citing appropriate “levels,” and referencing sufficient supporting documentation demonstrating that these “levels” are not exceeded.

 If yes (for any media) - continue after identifying key contaminants in each “contaminated” medium, citing appropriate “levels” (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

 If unknown (for any media) - skip to #6 and enter “IN” status code.

¹ “Contamination” and “contaminated” describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based “levels” (for the media, that identify risks within the acceptable risk range).

² Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

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Rationale and Reference(s):

A closure plan was submitted to PADEP for a hazardous waste storage area in May 1985. On June 25, 1985, the facility received a letter from PADEP indicating that the container storage area had been properly closed. In February 2007, PADEP also received a closure report of the wastewater treatment system. The facility had a 2,000-gallon UST, which was installed in 1971 and removed from service in 1982. The UST, which contained No. 2 Fuel Oil, was located in the basement of the building. On December 4, 1995, the PADEP reviewed the closure report and found it acceptable. PADEP indicated that since the extent of hydrocarbon impact appears minimal no further action is necessary.

During the ownership transfer in 2001, a Phase I Environmental Site Assessment was completed by Environmental Systems and Services. The study concluded that soil sample results showed very minimal indication of contamination by VOCs. The study also addressed the closure of the UST. Based on samples collected from under the tank analyzed for total petroleum hydrocarbons diesel range organics (TPH-DRO), and the observed interior condition of the tank and the tank fill pipe, there was no indication of a release of fuel oil from the UST system.

Both a passive soil vapor survey and discrete soil sample analyses detected low levels of solvent related compounds. Of the regulated compounds for which quantitative laboratory analyses were conducted, only TCE was conclusively detected, at a single location, at low levels (19µg/kg). This is considerably below the State Health Guidance Level of 2,000 µg/kg. Because of the low levels measured and its isolated occurrence, the Phase I Assessment concluded that the presence of TCE at the single location does not indicate a significant potential impact to the surrounding environment. BTEX, PCE, and 1,1,1-TCA compounds were not detected in any of the soil samples. Furthermore, the overall absence of contaminants in site soils as indicated by both semi-quantitative and quantitative analyses indicates the absence of significant environmental impacts due to building operations.

It should be noted that TCE is identified in the 2001 *RCRA Draft Supplemental Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway (Vapor Intrusion Guidance)* as being sufficiently volatile and toxic to potentially contribute to the indoor air pathway. As previously mentioned, the soil sample exhibiting the low concentration of TCE (19 µg/kg) was collected from the basement of the building, in the vicinity of the former 2,000 gallon fuel oil UST. Although it is known that the TCE concentration was detected underneath the building, it cannot be confirmed that there was at least 5 feet of soil between impacted soil and building foundation. Therefore, according to the PADEP *Land Recycling Program Technical Guidance Manual – Section IV.A.4 (Vapor Intrusion into Buildings from Groundwater and Soil under the Act 2 Statewide Health Standard)*, PADEP's default indoor air screening values should not be used without further site-specific model evaluation. However, based on the low TCE concentration and its isolated occurrence, the presence of TCE at a single location does not indicate a significant potential impact to indoor air. Furthermore, the absence of contaminants in site soil supports this inference. Therefore, it is concluded that the subsurface vapor to indoor air pathway is incomplete assuming a nonresidential exposure scenario.

The study recommended no further investigation and noted that no remediation was necessary due to the extremely low levels of compounds detected.

Following the site visit, discussions with site personnel, an evaluation of facility operations, and review of the regulatory record, it has been confirmed that no remedial work was required or completed at the facility. There have been no reportable releases, no current instances or evidence of soil or groundwater contamination, no site remediation, and no current or future soil sampling or groundwater monitoring efforts.

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3. Are there **complete pathways** between “contamination” and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

Contaminated Media	Potential Human Receptors (Under Current Conditions)						
	<u>Residents</u>	<u>Workers</u>	<u>Day-Care</u>	<u>Construction</u>	<u>Trespassers</u>	<u>Recreation</u>	<u>Food³</u>
Groundwater							
Air (indoors)							
Soil (surface, e.g., <2 ft.							
Surface Water							
Sediment							
Soil (subsurface e.g., >2 ft.							
Air (outdoors)							

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors’ spaces for Media which are not “contaminated” as identified in #2 above.
2. enter “yes” or “no” for potential “completeness” under each “Contaminated” Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential “Contaminated” Media - Human Receptor combinations (Pathways) do not have check spaces (“___”). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

_____ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter “YE” status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

_____ If yes (pathways are complete for any “Contaminated” Media - Human Receptor combination) - continue after providing supporting explanation.

_____ If unknown (for any “Contaminated” Media - Human Receptor combination) - skip to #6 and enter “IN” status code.

Rationale and Reference(s):

³ Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.

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4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **“significant”**⁴ (i.e., potentially “unacceptable” because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable “levels” (used to identify the “contamination”); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable “levels”) could result in greater than acceptable risks)?

_____ If no (exposures can not be reasonably expected to be significant (i.e., potentially “unacceptable”) for any complete exposure pathway) - skip to #6 and enter “YE” status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”

_____ If yes (exposures could be reasonably expected to be “significant” (i.e., potentially “unacceptable”) for any complete exposure pathway) - continue after providing a description (of each potentially “unacceptable” exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”

_____ If unknown (for any complete pathway) - skip to #6 and enter “IN” status code

Rationale and Reference(s):

5. Can the “significant” **exposures** (identified in #4) be shown to be within **acceptable** limits?

_____ If yes (all “significant” exposures have been shown to be within acceptable limits) - continue and enter “YE” after summarizing and referencing documentation justifying why all “significant” exposures to “contamination” are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

_____ If no (there are current exposures that can be reasonably expected to be “unacceptable”)- continue and enter “NO” status code after providing a description of each potentially “unacceptable” exposure.

_____ If unknown (for any potentially “unacceptable” exposure) - continue and enter “IN” status code

Rationale and Reference(s):

4 If there is any question on whether the identified exposures are “significant” (i.e., potentially “unacceptable”) consult a human health Risk Assessment specialist with appropriate education, training and experience.

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6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

 X YE – Yes, “Current Human Exposures Under Control” has been verified. Based on a review of the Information contained in this EI Determination, “Current Human Exposures” are expected to be “Under Control” at the Bulova Technologies LLC facility, EPA ID # PAD 000800680 , located at 101 North Queen Street Lancaster, PA 17604 under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

 NO - “Current Human Exposures” are NOT “Under Control.”

 IN - More information is needed to make a determination.

Completed by (signature) _____ Date _____

(print) _____

(title) _____

Supervisor (signature) _____ Date _____

(print) _____

(title) _____

(EPA Region or State) _____

Locations where References may be found:

USEPA Region III
Waste and Chemical Mgmt. Division
1650 Arch Street
Philadelphia, PA 19103

PADEP
Southcentral Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110

Contact telephone and e-mail numbers

(signature) _____

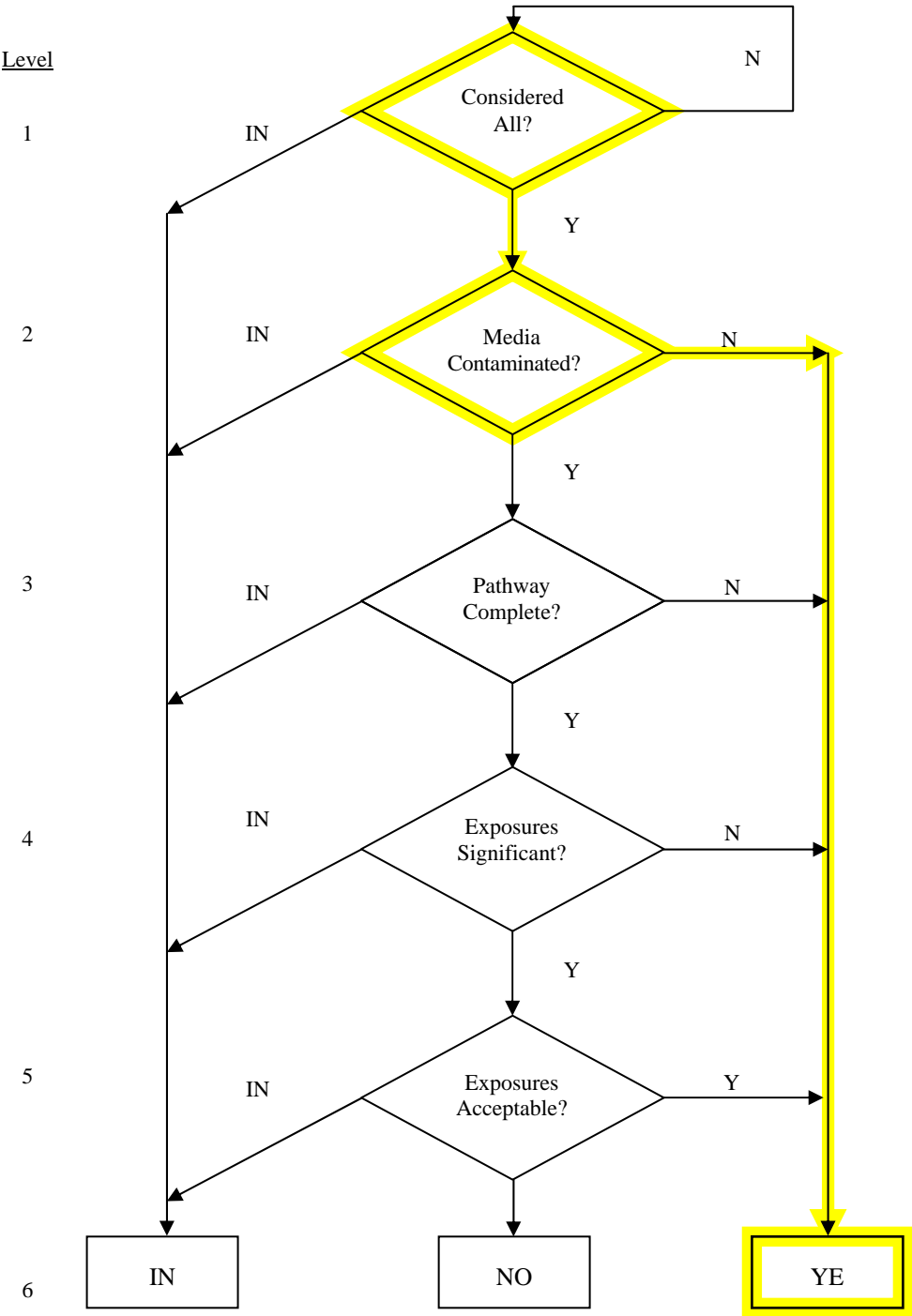
(print) _____

(title) _____

FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.

Facility Name: Bulova Technologies LLC
EPA ID# PAD 000800680
City/State Lancaster, PA 17604

CURRENT HUMAN EXPOSURES UNDER CONTROL (CA725)



DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action

Environmental Indicator (EI) RCRIS code (CA750)

Migration of Contaminated Groundwater Under Control

Facility Name: **Bulova Technologies LLC**

Facility Address: **101 North Queen Street, Lancaster, PA 17604**

Facility EPA ID #: **PAD 000800680**

1. Has all available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units [SWMU], Regulated Units [RU], and Areas of Concern [AOC])

☒ If yes – check here and continue with #2 below.

☐ If no – re-evaluate existing data, or

☐ If data are not available skip to #6 and enter “IN” (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of “Migration of Contaminated Groundwater Under Control” EI

A positive “Migration of Contaminated Groundwater Under Control” EI determination (“YE” status code) indicates that the migration of “contaminated” groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original “area of contaminated groundwater” (for all groundwater “contamination” subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The “Migration of Contaminated Groundwater Under Control” EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

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2. Is **groundwater** known or reasonably suspected to be “contaminated”¹ above appropriately protective “levels” (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

_____ If yes - continue after identifying key contaminants, citing appropriate “levels,” and referencing supporting documentation.

 X If no - skip to #8 and enter “YE” status code, after citing appropriate “levels,” and referencing supporting documentation to demonstrate that groundwater is not “contaminated.”

_____ If unknown - skip to #8 and enter “IN” status code.

Rationale and Reference(s):

A closure plan was submitted to PADEP for a hazardous waste storage area in May 1985. On June 25, 1985, the facility received a letter from PADEP indicating that the container storage area was properly closed. In February 2007, PADEP also received a closure report of the wastewater treatment system. The facility had a 2,000-gallon underground storage tank (UST), which was installed in 1971 and removed from service in 1982. The UST, which contained No. 2 fuel oil, was located in the basement of the building. On December 4, 1995, PADEP reviewed the closure report and found it acceptable. PADEP indicated that since the extent of hydrocarbon impact appears minimal, no further action was necessary.

During the ownership transfer in 2001, a Phase I Environmental Site Assessment was completed by Environmental Systems and Services. The study concluded that soil sample results showed very minimal indication of contamination by volatile organic compounds (VOCs). The study also addressed the closure of the UST. Based on samples collected from under the tank analyzed for total petroleum hydrocarbons diesel range organics (TPH-DRO), and the observed interior condition of the tank and the tank fill pipe, there was no indication of a release of fuel oil from the UST system.

Both a passive soil vapor survey and discrete soil sample analyses detected low levels of solvent-related compounds. Of the regulated compounds for which quantitative laboratory analyses were conducted, only trichloroethene (TCE) was conclusively detected, at a single location, at low levels (19µg/kg). This is considerably below the State Health Guidance Level of 2,000 µg/kg. Because of the low levels measured and its isolated occurrence, the Phase I Assessment concluded that the presence of TCE at the single location does not indicate a significant potential impact to the surrounding environment. Benzene, toluene, ethylbenzene and xylenes (BTEX), tetrachloroethylene (PCE), and 1,1,1-trichloroethane (1,1,1-TCA) compounds were not detected in any of the soil samples. Furthermore, the overall absence of contaminants in site soils as indicated by both semi-quantitative and quantitative analyses indicates the absence of significant environmental impacts due to building operations.

The study recommended no further investigation and noted that no remediation was necessary due to the extremely low levels of compounds detected.

Following the site visit, discussions with site personnel, an evaluation of facility operations, and review of the regulatory record, it has been confirmed that no remedial work was required or completed at the facility. There have been no reportable releases, no current instances or evidence of soil or groundwater contamination, no site remediation, and no current or future soil sampling or groundwater monitoring efforts. Lancaster is supplied with public water and consequently, PADEP approved a Non-Use Aquifer designation in November 2007. This designation allows the development of any industrial property as a brownfield under the Pennsylvania Act 2 program without the need to cleanup the aquifer to meet drinking-water standards.

¹ “Contamination” and “contaminated” describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate “levels” (appropriate for the protection of the groundwater resource and its beneficial uses).

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3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within “existing area of contaminated groundwater”² as defined by the monitoring locations designated at the time of this determination)?

_____ If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the “existing area of groundwater contamination”²).

_____ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the “existing area of groundwater contamination”²) - skip to #8 and enter “NO” status code, after providing an explanation.

_____ If unknown - skip to #8 and enter “IN” status code.

Rationale and Reference(s):

² “existing area of contaminated groundwater” is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of “contamination” that can and will be sampled/tested in the future to physically verify that all “contaminated” groundwater remains within this area, and that the further migration of “contaminated” groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

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4. Does “contaminated” groundwater **discharge** into **surface water** bodies?

_____ If yes - continue after identifying potentially affected surface water bodies.

_____ If no - skip to #7 (and enter a “YE” status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater “contamination” does not enter surface water bodies.

_____ If unknown - skip to #8 and enter “IN” status code.

Rationale and Reference(s):

5. Is the **discharge** of “contaminated” groundwater into surface water likely to be “**insignificant**” (i.e., the maximum concentration³ of each contaminant discharging into surface water is less than 10 times their appropriate groundwater “level,” and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

_____ If yes - skip to #7 (and enter “YE” status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration³ of key contaminants discharged above their groundwater “level,” the value of the appropriate “level(s),” and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

_____ If no - (the discharge of “contaminated” groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration³ of each contaminant discharged above its groundwater “level,” the value of the appropriate “level(s),” and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations³ greater than 100 times their appropriate groundwater “levels,” the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

_____ If unknown - enter “IN” status code in #8.

Rationale and Reference(s):

³ As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

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6. Can the **discharge** of “contaminated” groundwater into surface water be shown to be “**currently acceptable**” (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented⁴)?

_____ If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site’s surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR
2) providing or referencing an interim-assessment,⁵ appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment “levels,” as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

_____ If no - (the discharge of “contaminated” groundwater can not be shown to be “**currently acceptable**”) - skip to #8 and enter “NO” status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

_____ If unknown - skip to 8 and enter “IN” status code.

Rationale and Reference(s):

4 Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

5 The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

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7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the “existing area of contaminated groundwater?”

_____ If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the “existing area of groundwater contamination.”

_____ If no - enter “NO” status code in #8.

_____ If unknown - enter “IN” status code in #8.

Rationale and Reference(s):

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(name) _____

(phone#) _____

(e-mail) _____

Bulova Technologies LLC

PAD 000800680

Lancaster, PA 17604

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graph TD
    L1[Level 1] --> D1{Considered All?}
    D1 -- N --> NO[NO]
    D1 -- Y --> L2[Level 2]
    L2 --> D2{Groundwater Contaminated?}
    D2 -- N --> NO
    D2 -- Y --> L3[Level 3]
    L3 --> D3{Migration Stabilized?}
    D3 -- N --> NO
    D3 -- Y --> L4[Level 4]
    L4 --> D4{Discharge to Surface Water?}
    D4 -- N --> NO
    D4 -- Y --> L5[Level 5]
    L5 --> D5{Discharge Insignificant?}
    D5 -- Y --> NO
    D5 -- N --> L6[Level 6]
    L6 --> D6{Discharge Currently Acceptable?}
    D6 -- N --> NO
    D6 -- Y --> L7[Level 7]
    L7 --> D7{Further Monitoring?}
    D7 -- N --> NO
    D7 -- Y --> IN[IN]
    NO --> NO
    IN --> IN
    YE --> YE
  
```

**United States Environmental Protection Agency
Region III
Corrective Action Program**

**FINAL
Environmental Indicator Inspection Report
For**

**Bulova Technologies LLC
101 North Queen Street
Lancaster, PA 17604**

EPA ID No. PAD 000800680

Prepared By



August 2009

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**NOTE: FILE REVIEW AND SITE VISIT CONDUCTED IN 2007. REPORT EDITED TO
INCLUDE VAPOR INTRUSION REVIEW.**

RCRA SITE INSPECTION REPORT

Purpose: To gather relevant information from the Bulova Technologies LLC (Bulova) facility, in order to determine whether human exposures and groundwater releases are controlled, as per Environmental Indicator Determination forms.

Documentation Review: Prior to the meeting, Mr. Matthew Myers, of Michael Baker Jr., Inc. (Baker) conducted an extensive record review of the Pennsylvania Department of Environmental Protection (PADEP) South Central Regional Office and the U.S. Environmental Protection Agency (USEPA) Region III Philadelphia Office. Subsequent to the site visit, Bulova provided Baker with additional information to be incorporated in the report.

Attendees at Site Inspection:

Name	Organization	Phone Number	E-Mail address
Mr. Matthew Myers	Baker	412-375-30641	mmyers@mbakercorp.com
Ms. Linda Houseal	PADEP	717-705-4919	houseal@state.pa.us
Mr. John Pollock	PADEP	717-299-7601	jpollock@state.pa.us
Mr. Rick Daniels	Bulova	717-299-2581	rdaniels@bulovatech.com

Meeting Summary: A meeting at the Bulova facility was held with the attendees noted above on September 26, 2007. Mr. Matthew Myers, Baker, an Environmental Associate, presented the facility with information regarding USEPA Region III's Corrective Action process, the Environmental Indicator Assessment Program and the legislation driving this program. Under this investigation, USEPA Region III is focusing on two interim Environmental Indicators to evaluate whether any unacceptable risk to human health and the environment is ongoing at each priority facility. The two indicators are determining if human exposures are controlled and groundwater releases are controlled. Prior to and during the site inspection, outstanding issues and discrepancies encountered in the file review summary were discussed.

The site visit continued with an overview of areas to be observed and a tour of the Bulova facility. Photographs of the site visit are presented in Appendix A – Photographs.

A. Location and Operational History of the Facility, Including all Wastes Generated at the Facility and their Management.

Site Layout and Background Information

The Bulova facility is located at 101 North Queen Street, Lancaster Pennsylvania, Lancaster County (Appendix B - Site Location Map). The facility consists of a four-story brick building, approximately 210,000 square feet in size, with no outside property. Land use in the immediate vicinity of the facility is urban/commercial with intermixed businesses and residences. The building was constructed in the early 1970s. Previous owners include: the Hamilton Division of HMW Industries (Hamilton), Clabir Corporation, Olin Corporation, and Bulova. On December 18, 2001, Bulova sold the defense products portion of its business to BT Fuze Products Division (BT Fuze), under the parent company, L-3 Communications Corporation (L3). Currently, a portion of the facility is leased to BT Fuze. Thus, the facility hosts operations of two separate companies, Bulova and BT Fuze.

The building was constructed in the early 1970s and used by Hess' Department Store. According to the 1989 Preliminary Assessment (PA) inspection of the facility, it is not known how long Hess' Department Store operated at this location. The building was reportedly vacant when it was purchased by Hamilton in September 1980. After refurbishing, Hamilton started production in the spring of 1981. According to the 1989 PA, Clabir Corporation bought the facility from Hamilton in early 1986. Olin Corporation purchased the facility in late 1988. Bulova purchased the property in 1991.

Hamilton used the building for the design, manufacturing, and assembly of arming devices under government contract. At the time Hamilton conducted operations, each floor consisted of assembly lines and individual work areas. The first floor was comprised of finishing and machining areas, laboratory, tool shop, solvent storage area, waste solvent and sludge storage area, filter press, and various other work areas. Degreasers were located on the third and fourth floors. The wastewater treatment system, with a 2,693-gallon sludge tank, was located in the basement on the western side of the building.

The facility generated a wide assortment of hazardous wastes over the years including: D001 (ignitability); D003 (reactivity); D006 (cadmium), D007 (chromium), and D011 (EP toxic); F001 (spent halogenated solvents); F003 and F005 (spent nonhalogenated solvents); F006

(electroplating sludge); and F007, F008, and F009 (plating bath sludges and solutions). The facility also had air permits for vapor degreasers and their air scrubber.

The wastewater treatment system was located in the basement on the western side of the building. The system was approximately 45 ft by 32 ft in size with a concrete floor and diked doors. The system utilized approximately 13 separate tanks, ranging in volume from 200 to 3,500 gallons, each representing various stages in the treatment process. Three distinct waste streams, cyanide, chromium, and acid/alkali, passed through the system eventually discharging into the main sump. The main sump flowed into the clarifier, which was connected to the sludge thickening tank. The sludge was eventually pumped into the sludge tank while the effluent was discharged to the publicly owned treatment works (POTW).

Historically, Bulova was involved in the manufacturing and assembly of military detonators, safety equipment, commercial computer chips, and circuit boards. Currently, Bulova is a Conditionally Exempt Small Quantity Generator (CESQG) and assembles printed wiring boards, generating some lead waste from solder operations (Appendix A – Photographs). The only hazardous waste kept on site is solder flux and isopropyl alcohol. The third and fourth floors are currently vacant as the building awaits future tenants.

Permit and Regulatory Action History

Hamilton filed a Notification of Hazardous Waste Activity form on August 18, 1980 and was subsequently assigned U. S. Environmental Protection Agency (USEPA) I.D. No. PAD000800680. The facility submitted a Part A Hazardous Waste Permit Application to USEPA in November 1980. On July 21, 1981, USEPA acknowledged the company's Part A submittal, and the facility began storing and treating hazardous wastes onsite under interim status. Identified hazardous wastes that the facility was permitted to handle were classified as D001 (ignitable); D003 (reactive); D006 (cadmium), D007 (chromium), and D011 (silver); F001 (spent halogenated solvents); F003 and F005 (spent nonhalogenated solvents); F006 (electroplating sludge); and F007, F008, and F009 (plating bath sludges and solutions) (documents cited are included in Appendix C - Inventory of Documentation and Reference Documents).

On October 19, 1982, the facility received a formal request to file a Part B application from the USEPA. A Part B application, to store hazardous wastes, was submitted and approved in April 1983. Hamilton requested withdrawal of their storage permit in a letter to the Pennsylvania

Department of Environmental Protection (PADEP) on January 28, 1985. The facility indicated that the storage area was never used to store hazardous wastes greater than 90 days.

During Hamilton operations, the facility treated and discharged effluent to the Lancaster sewer system. The facility was granted a permit-by-rule status by PADEP in June 1983 (Permit No. 28249). The City of Lancaster allowed discharges since April 1981 under Permit No. 1020. Quarterly sampling of the treated discharge was conducted. A solid waste incinerator (City of Lancaster Permit No. 440451), which was used to incinerate paper and cardboard, was removed from operation in the early 1980s.

A closure plan was submitted to PADEP for a hazardous waste storage area in May 1985. The 42 ft by 43 ft room was located in the far northwestern corner on the first floor and contained a filter press and recycling still. At this time, the facility was classified as a SQG and stored the hazardous wastes generated at the facility in either the waste solvent storage or sludge tank room. On June 25, 1985, the facility received a letter from PADEP indicating that the container storage area had been properly closed. On July 5, 1985, Fuehrer Associates, on behalf of Hamilton, provided a certification of closure for the storage area.

The facility had active air permits issued by PADEP for the vapor degreasers (Permit Nos. 36-327-003 and 36-327-005) and for the air scrubber (Permit No. 36-318-102). The air scrubber permit was originally issued on October 2, 1982. On October 17, 1990, PADEP received the facility's permit application for the conveyORIZED vapor degreaser. On October 11, 1990, Hamilton sent a letter to the City of Lancaster requesting approval to operate a freon vapor degreaser to be used in the electronic fuze assembly area. On December 5, 1990, PADEP approved the plan to construct a conveyORIZED vapor degreaser.

On July 1, 1991, PADEP received a Change of Ownership request for Permit No. 36-318-102 that noted Hamilton as the previous owner/operator and Bulova as the new owner/operator.

In 1996, the regulatory record indicates that Bulova had two active air permits, one for the plating and finishing area controlled by a scrubber (Permit No. 36-318-102), and another for the conveyORIZED vapor degreaser with sub-zero chiller (Permit No. 36-327-011A). On October 31, 1997, Bulova sent a Minor Operating Air Permit application to PADEP that would replace the current individual source permits. The August 28, 2001, a PADEP inspection report noted that

the conveyORIZED vapor degreaser was taken out of service in 1995. On May 23, 2001, the facility received their approved Operating Permit No. 36-03033 from PADEP.

On August 8, 1995, PADEP issued Bulova Hazardous Waste Transporter License No. PA-AH0493.

On April 20, 1998, PADEP conducted a uniform hazardous waste manifest review of the facility. At that time, Bulova was found to be in violation of the Solid Waste Management Act (SWMA). PADEP issued a Notice of Violation (NOV) to Bulova on August 5, 1999. The violation dealt with Bulova's failure to sign and date Item 20 on a hazardous waste manifest that certified that the hazardous waste was received. On October 20, 1999, Bulova received a Consent Assessment of Civil Penalty letter from the PADEP for the violation.

On December 6, 1999, PADEP sent an Evaluation-Violation-Enforcement Form to the facility indicating the facility's current status as a large quantity generator (LQG) and transporter should be changed to a SQG. The facility returned a revised Notification of Waste activity on December 17, 1999.

On December 18, 2001, Bulova sold the defense products portion of its business to BT Fuze. As part of this transaction, both entities agreed to continue operations under the current facility air permit (No. 36-03033), which was under the Bulova name.

On February 12, 2003, PADEP notified the facility that it was in violation of the Air Pollution Control Act because the re-circulating pump on the Heil Packed Tower Scrubber had been deactivated due to the structural failure of the unit's Mist Eliminator. On May 22, 2003, the facility sent a letter to PADEP explaining the reason for the malfunction.

On June 3, 2003, the facility sent a "Request for Determination of Requirement for Plan Approval/Operating Permit (RFD)" form to PADEP for equipment in five departments that produce insignificant or de minimus emissions. In August 2003, the facility sent a RFD form to PADEP for ethylene oxide emissions, estimated to be 0.0094 pounds per hour and 0.019 tons per year for a proposed sterilization unit with a projected start-up date sometime in October 2003. In August 2003, the PADEP sent a letter to the facility indicated that they were prepared to exempt this unit.

On November 24, 2003, BT Fuze sent a Notification of Hazardous Waste Permit-By-Rule Activity form to PADEP for the wastewater pretreatment system.

On May 28, 2004, PADEP sent correspondence to the facility indicating that it was suspending Operating Permit No. 36-03033 due to process changes and pollution prevention efforts of the facility that reduced emissions from the facility's emission sources to levels well below the permitting thresholds.

On February 5, 2007, BT Fuze notified PADEP that it ceased operation of its permit-by-rule elementary neutralization and wastewater treatment system because manufacturing operations at the Lancaster location have closed and moved out of state. Environmental Resources Management (ERM), on behalf of BT Fuze, provided PADEP with a closure report following the voluntary closure and decommissioning of the treatment system. Analytical results from wipe tests for chromium, nickel, and cyanide of the pH adjustment tank, chrome reduction tank, and wastewater sump wall were provided. The highest concentration was 0.019 mg/cm² (chromium) was well below the 1 mg/cm² standard set by BT Fuze.

National Pollution Discharge Elimination System (NPDES)

Bulova does not operate under a NPDES permit. Currently, Bulova has a discharge permit with the city, for which Bulova monitors monthly and submits a quarterly report.

B. Description of all Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs)

SWMUs

Six SWMUs were identified at the facility during the 1989 PA. These included the wastewater treatment room, the electroplating sludge tank, filter press, waste solvent storage area, solvent recycling still, and the permitted air scrubber. Two of the four were permitted units, two involved waste solvents, and two involved waste streams generated during electroplating processes. The following table presents information concerning the six SWMUs.

No.	Name	Location	SWMUs	
			Wastes Managed	Release Controls
1 Active	Wastewater Treatment Room	Western Corner of 1 st floor	Electroplating waste with waste codes: D003, D006, D007, D011, F007, F008, F009	Series of catch basins. Entire room provides containment area with concrete floors and diking.
2 Inactive	Electroplating Sludge Tank	1 st floor	Sludge from electroplating wastewater stream containing various heavy metals, including: cadmium, chromium, silver, and cyanide	Tank constructed of 1/4-inch steel with epoxy coating. High-level alarm and containment pit
3 Removed	Filter Press	1 st floor	Same as SWMU No. 2	Containment pit
4 Inactive	Waste Solvent Storage Room	Above Sludge Tank	Trichloroethene (TCE), 1,1,1-trichloroethane (1,1,1-TCA), freon, denatured ethanol, misc. flammable and waste oils	Concrete pit
5 Removed	Solvent Recycling Still	1 st floor	Freon and ethanol	No diking or secondary containment structures
6 Inactive	Air Scrubber	Roof	Volatile organic compounds and various metals, including: nickel, chromate, copper and zinc	None

See Appendix A – Photographs for the current status of SWMUs.

Storage Tanks

The facility had a 2,000-gallon underground storage tank (UST), which was installed in 1971 and removed from service in 1982. The UST, which contained No. 2 fuel oil, was located in the basement of the building. The UST was originally installed to supply fuel to the building's trash incinerator. On June 2, 1995, Bulova submitted simultaneously to PADEP a Registration of Storage Tanks form and an UST Closure Notification form. The contractor that conducted the closure activities was Environmental Systems and Services, Inc. of Lancaster, Pennsylvania. The UST closure report was received by PADEP on September 26, 1995. On December 4, 1995, the facility received a letter from PADEP acknowledging that they reviewed the closure report and found it acceptable. On December 22, 1995, Bulova provided PADEP with additional information regarding potential contamination in the UST's remote fill area. The facility received a letter from PADEP on February 7, 1996 indicating that since the extent of hydrocarbon impact appears minimal no further action was necessary.

According to the August 18, 1980 Notification of Hazardous Waste Activity form, the hazardous wastes generated at the facility, during operation by Hamilton, were classified by the facility as RCRA hazardous wastes with the following identified codes: D001 (ignitable), D003 (reactive), D006 (cadmium), D007 (chromium), and D011 (EP toxic), F001 (spent halogenated solvents), F003 and F005 (spent nonhalogenated solvents), F006 (electroplating sludge), F007, F008, F009 (plating bath sludges and solutions), and F019 (sludge from conversion coating of aluminum). The electroplating process generated a sludge and wastewater that was laden with cadmium, chromium, and cyanide.

The hazardous wastes generated on December 6, 1999, according to PADEP's inspection form, included: F003 (methyl ethyl ketone), F006 (filter cake), D003 (waste detonators), F002 (dichloromethane), and D001 (flammable liquids, aerosols). The facility's Notification of Regulated Waste Activity, dated March 7, 2002, indicated that the facility generated hazardous wastes F003 and F005 (spent nonhalogenated solvents).

Remedial Action to Date

The 1989 PA indicated that no remedial work was required at the facility. In addition, no spill reports were issued by PADEP, USEPA, or the City of Lancaster.

During the ownership transfer in 2001, a Phase I Environmental Site Assessment was completed by Environmental Systems and Services. The study concluded that soil sample results showed very minimal indication of contamination by VOCs. The study also addressed the closure of the UST. Based on samples collected from under the UST analyzed for total petroleum hydrocarbons diesel range organics (TPH-DRO), and the observed interior condition of the UST and the fill pipe, there was no indication of a release of fuel oil from the UST system.

Both a passive soil vapor survey and discrete soil sample analyses detected low levels of solvent related compounds. Of the regulated compounds for which quantitative laboratory analyses were conducted, only TCE was conclusively detected, at a single location, at a low level (19µg/kg). This is considerably below the State Health Guidance Level of 2,000 µg/kg. Because of the low levels measured and its isolated occurrence, the Phase I Assessment concluded that the presence of TCE at the single location does not indicate a significant potential impact to the surrounding environment. BTEX, PCE and 1,1,1-TCA compounds were not detected in any of the soil samples. Furthermore, the overall absence of contaminants in site soils as indicated by both

semi-quantitative and quantitative analyses indicated the absence of significant environmental impacts due to building operations.

The study recommended no further investigation and noted that no remediation was necessary due to the extremely low levels of compounds detected.

Inspection

PADEP conducted an inspection of the facility on May 25, 1982. No violations were observed. The inspection report noted that previous non-compliance items were corrected.

PADEP conducted an inspection of the facility on March 28, 1983 and June 10, 1983 noting no violations were observed and that previous non-compliance items were corrected. PADEP conducted an inspection of the facility on September 14, 1983. No violations were observed. The inspection report included the comment that permit-by-rule determination had been issued for the treatment activities and that the hazardous waste storage area should be posted with the required signage.

PADEP conducted an inspection of the facility on December 14, 1983 and no violations were noted. On March 16, 1984, PADEP conducted an inspection of the facility. No violations were noted; however, the inspection report indicated that container storage/accumulation requirements were discussed with the facility representative.

PADEP conducted an inspection of the facility on June 27, 1984. No violations were observed; however, the notes on the inspection report indicate that the regulations require a 50 ft set-back from the property boundaries of the facility.

PADEP conducted an inspection of the facility on April 10, 1985. The inspection was conducted to evaluate the closure plan for the drum storage area, which was a 2,500-gallon tank for waste sludge and a drum accumulation area for waste solvents. The inspection report indicated that the closure plan should be prepared based on future, not current, use. On June 25, 1985, PADEP approved the closure plan.

PADEP conducted an inspection of the facility on November 5, 1986. The inspection report indicated that the new vapor degreaser was operating in conformance with its application.

PADEP conducted an inspection of the facility on July 2, 1991. This inspection focused on the operation of the two conveyORIZED vapor degreasers. No violations were noted in the inspection report.

PADEP conducted an inspection of the facility on February 19, 1993. No violations were noted in the inspection report.

PADEP conducted an inspection of the facility on April 25, 1995. No violations were noted in the inspection report; however, the inspection report recommended that the facility obtain a hazardous waste transporters licenses and ensure that the hazardous waste containers are stored with secondary containment.

PADEP conducted an inspection of the air pollution controls in the plating and finishing area of the facility on September 22, 1999. No air quality violations were noted. The inspection report noted that the scrubber controls emissions from three areas: Chem Lab, Finishing/Plating area, and the Technical Products area. The inspection report also noted that the majority of the pick-up points are for plating operations, including nickel, chromate, copper, and zinc lines and a small amount of precious metal plating from the laboratory.

PADEP conducted an inspection of the facility on October 6, 1999. No violations were noted on the inspection report.

PADEP conducted an inspection of the facility on December 6, 1999. No violations were noted in the inspection report. The Evaluation-Violation-Enforcement Form of the same date indicated that the status of the facility changed from a LQG/transporter to a SQG.

PADEP conducted an inspection of the facility on September 18, 2000. The inspection report noted there were no air quality violations or problems observed during the inspection. The report also noted that the conveyORIZED degreaser covered by Permit No. 36-327-011A was taken out of service in 1995.

PADEP conducted an inspection of the facility on August 28, 2001. The inspection report noted there were no air quality violations or problems observed during the inspection. The report also

noted that the conveyORIZED degreaser covered by Permit No. 36-327-011A was taken out of service in 1995.

PADEP conducted an inspection of the air pollution controls in the plating and finishing area of the facility on January 15, 2003. The inspection report noted the air permit was issued on May 23, 2001 and would expire on May 31, 2006. During the inspection, it was observed that the re-circulating pump for the scrubber solution was not in operation. The facility was advised that not operating the scrubber as designed constitutes a violation of their permit and that a NOV would be subsequently prepared.

PADEP conducted an inspection of the facility on July 24, 2003. The inspection report noted that there were no air quality violations or problems observed during the inspection.

PADEP conducted an inspection of the facility on April 14, 2004. According to the inspection report, there were no air quality violations or problems observed. The inspection report noted that the ethylene oxide unit was never installed.

C. Description of Exposure Pathways for all Releases or Potential Releases

Air: Prior assessments made no determination as to the estimated population within a three mile radius of the Bulova facility. Available information indicates that approximately 56,348 people live within the town of Lancaster, PA as of the 2000 census. However, this number does not reflect the population within a specified radius of the site as portions of other towns populations may lay within the specified radius of the facility.

Groundwater: The uppermost aquifer beneath the site is considered to be within the Conestoga Formation and groundwater is believed to flow in the downward-sloping direction of the overlying topography. Wells in this formation range in depth from 38 ft to 502 ft below the grade surface (bgs) and the median depth is reported to be 105 ft (bgs). The specific capacity of these wells ranges from 0.02 to 130 gallons per minute (gpm) per foot of drawdown (1989 PA).

Water supply in the vicinity of the facility is provided by groundwater and surface water sources. The predominant supply system is operated by the City of Lancaster. Per the 1989 PA, this system maintains two surface water intakes: one on the Conestoga River and one on the

Susquehanna River. Areas beyond the distribution system of this public supplier are assumed to maintain individual domestic wells. The Conestoga River intake has an allocated capacity of 12 million gallons per day (mgd), while the Susquehanna River intake is allocated 24 mgd. The Conestoga intake is approximately 1.6 miles east-northeast and upgradient of the site. The 1989 PA indicated that information regarding the storm sewer system of the City of Lancaster was not available; therefore, the drainage pattern from the site could not be ascertained.

Surface Water: The surface water drainage, in the vicinity of the site, is to the Conestoga River Watershed. The Conestoga River, which flows from northeast to southwest, is 1 to 1.5 miles east of the facility. A surface water intake for the City of Lancaster Municipal Authority is located approximately 1.6 miles upstream on the river from the site (1989 PA). The Conestoga River is joined by Mill Creek which is approximately 3 miles south of the site. The Conestoga River eventually discharges into the Susquehanna River 10 miles southwest of the facility. No wetlands are in proximity to the facility.

Soil: The soils at the facility are classified as Urban land by the Soil Conservation Service. This classification is used where 85% or more of the surface is covered by roads, parking areas, buildings, or other structures. Also the Urban land areas are often subjected to cut and fill activities to achieve leveling. Specifically, the property is completely developed and the majority of the area is covered by the plant building and parking lot. There are no soil pH or permeability figures presented in the Soil Conservation Survey for the Urban land classification due to its highly variable nature.

D. Exposure Pathway Controls and/or Release Controls Instituted at the Facility

Air: The facility had active air permits issued by PADEP for the vapor degreasers (Permit Nos. 36-327-003 and 36-327-005) and for the air scrubber (Permit No. 36-318-102). On May 23, 2001, the facility received their approved Operating Permit No. 36-03033 from PADEP. Currently, the scrubber on the building roof is still present but no longer active. All air permits have been relinquished. No waste streams are currently generated that have potential to affect air quality.

Both a passive soil vapor survey and discrete soil sample analyses detected low levels of solvent related compounds. As described in the *Remedial Action to Date*, only TCE was conclusively

detected, at a single location, at a low level (19µg/kg). This was considerably below the State Health Guidance Level of 2,000 µg/kg.

It should be noted that TCE is identified in the 2001 *RCRA Draft Supplemental Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway (Vapor Intrusion Guidance)* as being sufficiently volatile and toxic to potentially contribute to the indoor air pathway. As previously mentioned, the soil sample exhibiting the low concentration of TCE (19 µg/kg) was collected from the basement of the building, in the vicinity of the former 2,000 gallon fuel oil UST. Although it is known that the TCE concentration was detected underneath the building, it cannot be confirmed that there was at least 5 feet of soil between impacted soil and building foundation. Therefore, according to the PADEP *Land Recycling Program Technical Guidance Manual – Section IV.A.4 (Vapor Intrusion into Buildings from Groundwater and Soil under the Act 2 Statewide Health Standard)*, PADEP’s default indoor air screening values should not be used without further site-specific model evaluation. However, based on the low TCE concentration and its isolated occurrence, the presence of TCE at a single location does not indicate a significant potential impact to indoor air. Furthermore, the absence of contaminants in site soil supports this inference. Therefore, it is concluded that the subsurface vapor to indoor air pathway is incomplete assuming a nonresidential exposure scenario.

Groundwater: There have been no reportable releases, no instances or evidence of groundwater contamination, no site remediation, and no past, current, or planned monitoring efforts. Lancaster is supplied with public water and consequently, PADEP approved a Non-Use Aquifer designation in November 2007. This designation allows the development of any industrial property as a brownfield under the Pennsylvania Act 2 program without the need to cleanup the aquifer to meet drinking-water standards.

Surface Water: Available records indicate Bulova did not operate under a NPDES permit. Currently, Bulova only generates one waste stream from a parts washer. Once the media is filtered, it is discharged to the POTW. Bulova’s permit with the city requires Bulova to monitor this discharge monthly and submit a quarterly report. There have been no instances of non compliance.

Soil: A closure plan was submitted to PADEP for a hazardous waste storage area in May 1985. On June 25, 1985, the facility received a letter from PADEP indicating that the container storage area had been properly closed. On February 5, 2007, PADEP also received a closure report of the

wastewater treatment system. The facility had a 2,000-gallon UST, which was installed in 1971 and removed from service in 1982. The UST, which contained No. 2 fuel oil, was located in the basement of the building. On December 4, 1995, the PADEP reviewed the closure report and found it acceptable. PADEP indicated that since the extent of hydrocarbon impact appears minimal, no further action was necessary.

During the ownership transfer in 2001, a Phase I Environmental Site Assessment was completed by Environmental Systems and Services. The study concluded that soil sample results showed very minimal indication of contamination by VOCs. The study also addressed the closure of the UST. Based on samples collected from under the UST analyzed for TPH-DRO, and the observed interior condition of the tank and the tank fill pipe (in 1995), there was no indication of a release of fuel oil from the UST system.

Both a passive soil vapor survey and discrete soil sample analyses detected low levels of solvent related compounds. Of the regulated compounds for which quantitative laboratory analyses were conducted, only TCE was conclusively detected, at a single location, at a low level (19µg/kg). This was considerably below the State Health Guidance Level of 2,000 µg/kg. Because of the low levels measured and its isolated occurrence, the Phase I Assessment concluded that the presence of TCE at the single location does not indicate a significant potential impact to the surrounding environment. BTEX, PCE, and 1,1,1-TCA compounds were not detected in any of the soil samples. Furthermore, the overall absence of contaminants in site soils as indicated by both semi-quantitative and quantitative analyses indicates the absence of significant environmental impacts due to building operations.

The study recommended no further investigation and noted that no remediation was necessary due to the extremely low levels of compounds detected.

Following the site visit, discussions with site personnel, an evaluation of facility operations, and review of the regulatory record, it has been confirmed that no remedial work was required or completed at the facility. There have been no reportable releases, no current instances or evidence of soil or groundwater contamination, no site remediation, and no current or future soil sampling or groundwater monitoring efforts.

E. Follow-up Action Items

USEPA Region III will decide if additional information or sampling at the facility is required to determine whether or not the environmental indicators have been met or if corrective action is required for the facility.

Baker

Michael Baker Jr., Inc.

APPENDIX A

Photographs

MICHAEL BAKER JR., INC. – PHOTOGRAPHIC RECORD

SITE NAME: Bulova Technologies LLC

PHOTOGRAPH

1

VIEW
North

PHOTOGRAPHS
BY

Baker



Comments: Active Bulova Technologies facility located at 101 North Queen Street Lancaster, PA.

PHOTOGRAPH

2

VIEW
Southeast

PHOTOGRAPHS
BY

Baker



Comments: The facility is bordered in all directions by commercial businesses in downtown Lancaster.

MICHAEL BAKER JR., INC. – PHOTOGRAPHIC RECORD

SITE NAME: Bulova Technologies LLC

PHOTOGRAPH

3

**VIEW
North**

**PHOTOGRAPHS
BY**

Baker



Comments: Second floor laboratory for assembly of printed wiring boards.

PHOTOGRAPH

4

**VIEW
Northeast**

**PHOTOGRAPHS
BY**

Baker



Comments: First floor laboratory for assembly of printed wiring boards.

MICHAEL BAKER JR., INC. – PHOTOGRAPHIC RECORD

SITE NAME: Bulova Technologies LLC

PHOTOGRAPH

5

**VIEW
Southeast**

**PHOTOGRAPHS
BY**

Baker



Comments: Former plating area. The area remains vacant for future tenants.

PHOTOGRAPH

6

**VIEW
West**

**PHOTOGRAPHS
BY**

Baker



Comments: Former plating area. The area remains vacant for future tenants.

MICHAEL BAKER JR., INC. – PHOTOGRAPHIC RECORD

SITE NAME: Bulova Technologies LLC

PHOTOGRAPH

7

VIEW
South

PHOTOGRAPHS
BY

Baker



Comments: Clarifier in SWMU 1, Wastewater Treatment Room.

PHOTOGRAPH

8

VIEW
North

PHOTOGRAPHS
BY

Baker



Comments: Several empty tanks in SWMU 1, Wastewater Treatment Room. The Wastewater Treatment Room only receives one waste stream from one parts washer.

MICHAEL BAKER JR., INC. – PHOTOGRAPHIC RECORD

SITE NAME: Bulova Technologies LLC

PHOTOGRAPH

9

**VIEW
North**

**PHOTOGRAPHS
BY**

Baker



Comments: Gray piping in SWMU 1 that discharges to the city. Bulova monitors the discharge monthly and submits a quarterly report. There have been no instances of non-compliance.

PHOTOGRAPH

10

**VIEW
North**

**PHOTOGRAPHS
BY**

Baker



Comments: The only active tank in SWMU 1 that receives waste from a parts washer.

MICHAEL BAKER JR., INC. – PHOTOGRAPHIC RECORD

SITE NAME: Bulova Technologies LLC

PHOTOGRAPH

11

**VIEW
North**

**PHOTOGRAPHS
BY**

Baker



Comments: Former location of SWMU 3, Filter Press. The area is currently used for miscellaneous storage.

PHOTOGRAPH

12

**VIEW
Northeast**

**PHOTOGRAPHS
BY**

Baker



Comments: Former SWMU 2, Electroplating Sludge Tank beneath the grating. This area is in SWMU 4, Waste Solvent Storage Room. The tank is no longer used and the room is currently used for storage.

MICHAEL BAKER JR., INC. – PHOTOGRAPHIC RECORD

SITE NAME: Bulova Technologies LLC

PHOTOGRAPH

13

VIEW
North

PHOTOGRAPHS
BY

Baker



Comments: Former location of SWMU 5, Solvent Recycling Still. Ventilation is still present in the ceiling.

PHOTOGRAPH

14

VIEW
Northeast

PHOTOGRAPHS
BY

Baker



Comments: Vacant 3rd Floor.

MICHAEL BAKER JR., INC. – PHOTOGRAPHIC RECORD

SITE NAME: Bulova Technologies LLC

PHOTOGRAPH

15

VIEW
North

PHOTOGRAPHS
BY

Baker



Comments: Former location of closed UST.

PHOTOGRAPH

16

VIEW
Northeast

PHOTOGRAPHS
BY

Baker



Comments: Former SWMU 6, Air Scrubber. The unit is no longer active. All air permits have been relinquished.



SCALE: 1"=300'
 S.O. NO.: 111100
 DSN/DWN:

DATE: October 2007
 FILE: 111100BOVA01
 CHK:

Baker MICHAEL BAKER Jr., INC.
 MOON TOWNSHIP, PENNSYLVANIA

FIGURE 1
 SITE LOCATION MAP
 BULOVA TECHNOLOGIES, LLC
 101 N QUEEN STREET, LANCASTER, PA

Inventory of Documentation and Reference Documents

The following is a list of documents in the order referenced in the report.

Document Date	Document
July 31, 1989	Preliminary Assessment Report
August 18, 1980	Notice of Hazardous Waste Activity
August 18, 1980	Revised Notice of Hazardous Waste Activity
January 2, 1981	Acknowledgement of Part A Application
February 1, 1981	Transporter License Application
July 21, 1981	Part A Application Review
October 19, 1982	Request for Part B Permit
April 1, 1983	Hazardous Waste Storage Permit
August 1, 1983	Review of Part B Application
February 28, 1984	Part B Application Discrepancies
May 7, 1984	Request for Part B Permit
May 21, 1984	PADEP Correspondence Requesting Permit Missing Information
July 12, 1984	Withdrawal of Part B Application
January 28, 1985	Request for Closure Plan
March 7, 1985	PADEP Response to Part B Withdrawal
June 25, 1985	Approval of Closure Plan
July 5, 1985	Certification of Closure
April 24, 1986	Request for SWMU Information
November 7, 1988	Notification of Hazardous Waste Activity
October 11, 1990	Application for Plan Approval
November 20, 1990	Correspondence for Plan Approval
December 5, 1990	Plan Approval
July 1, 1991	Name Change
February 3, 1993	Inspection and Air Permit Renewal
February 22, 1994	Notice of Hazardous Waste Activity
January 27, 1995	Notice of Hazardous Waste Activity
June 27, 1995	Notice of Hazardous Waste Activity
August 8, 1995	Transporter License Application
October 31, 1997	Natural Minor Operating Permit
October 31, 1997	Replacement of Individual Source Permits
August 5, 1999	NOV
September 22, 1999	Inspection Report
September 22, 1999	NOV
December 17, 1999	Notification of Change in Status to SQG
September 18, 2000	Inspection Report
March 5, 2001	Revised Air Permit
May 23, 2001	Natural Minor Operating Permit
January 1, 2002	Notice of Hazardous Waste Activity

Document Date	Document
January 8, 2002	Permit Status After Sale
March 6, 2002	Notice of Hazardous Waste Activity
January 1, 2003	Inspection Report
February 12, 2003	NOV
June 3, 2003	RFD Exemption Requests
August 5, 2003	Request for Determination of Requirement for Plan Approval/OP
November 24, 2003	Notification of Discharge to POTW
May 28, 2004	Suspension of Air Permits
February 5, 2007	Notification of Closeout of Hazardous Waste Permit-By-Rule
January 1, 2001	Phase I Environmental Site Assessment Conclusions
May 25, 1982	Hazardous Waste Inspection
March 28, 1983	Hazardous Waste Inspections
June 10, 1983	Hazardous Waste Inspection
September 14, 1983	Hazardous Waste Inspection
December 14, 1983	Hazardous Waste Inspection
March 16, 1984	Hazardous Waste Inspection
June 27, 1984	Hazardous Waste Inspection
April 10, 1985	Hazardous Waste Inspection
July 8, 1993	Hazardous Waste Inspection
April 25, 1995	Hazardous Waste Inspection
December 6, 1999	Hazardous Waste Inspection
August 28, 2001	Inspection Report
August 28, 2001	Inspection Report
July 24, 2003	Inspection Report
April 14, 2004	Inspection Report